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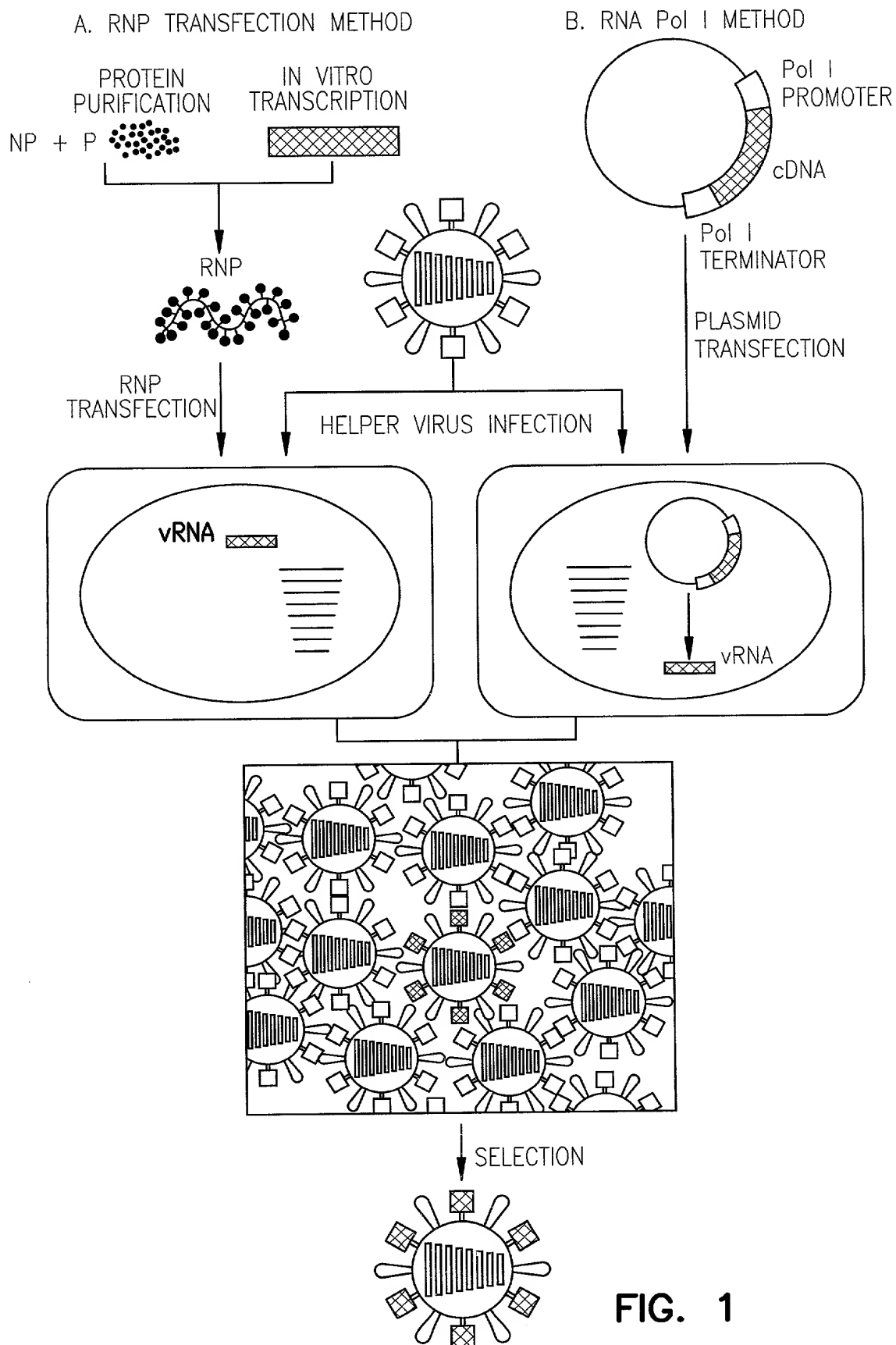


FIG. 1

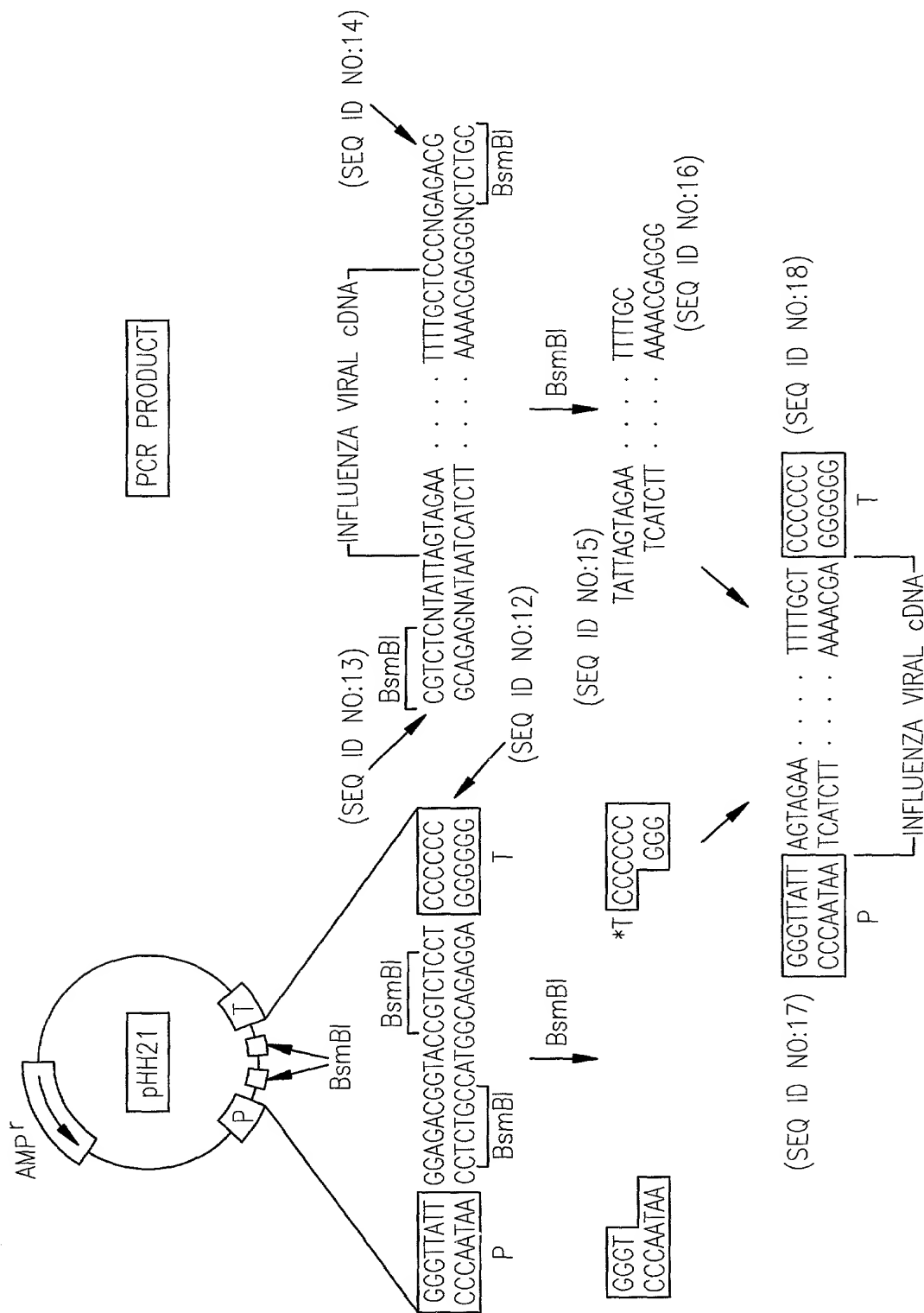
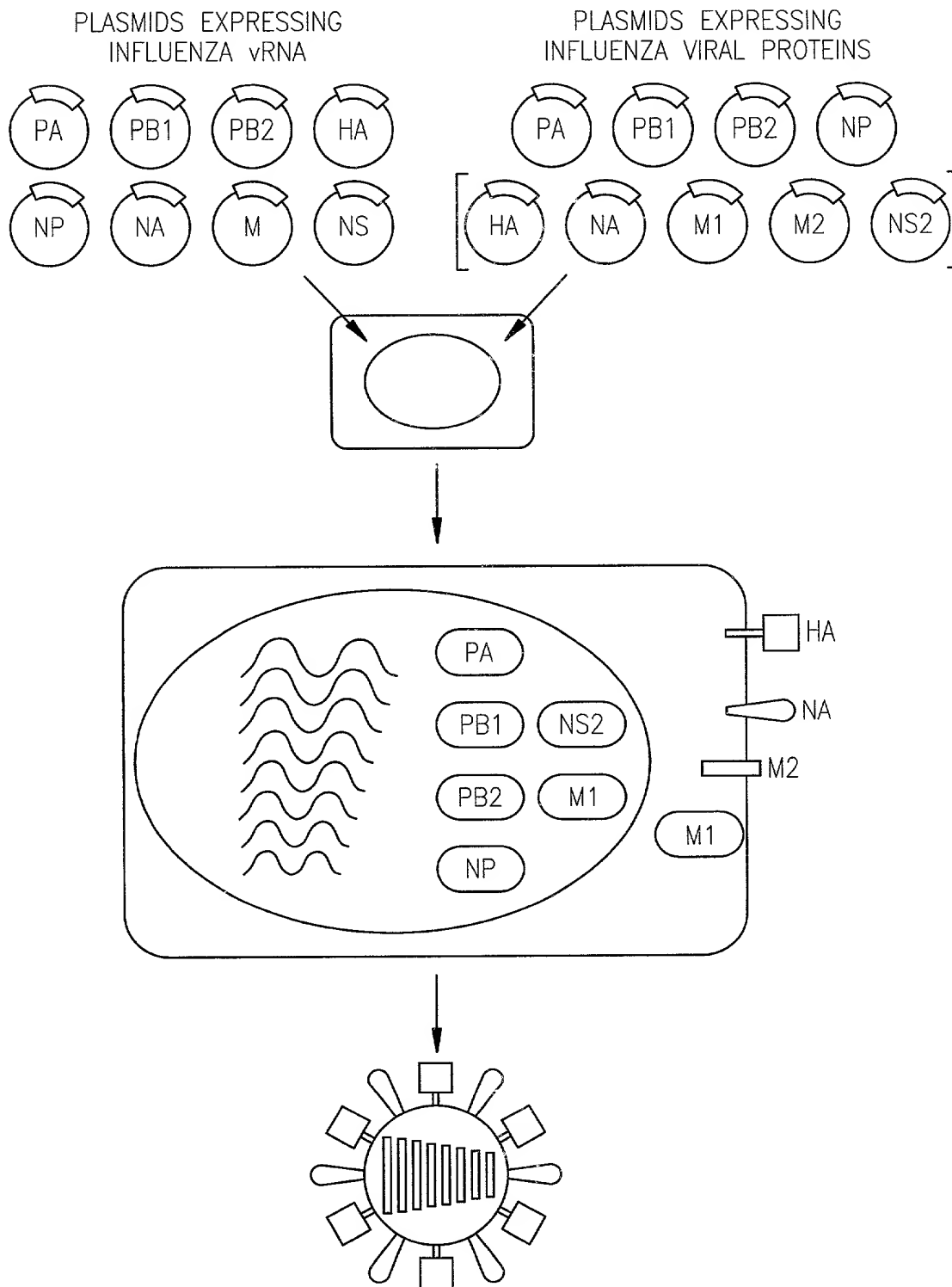


FIG. 2



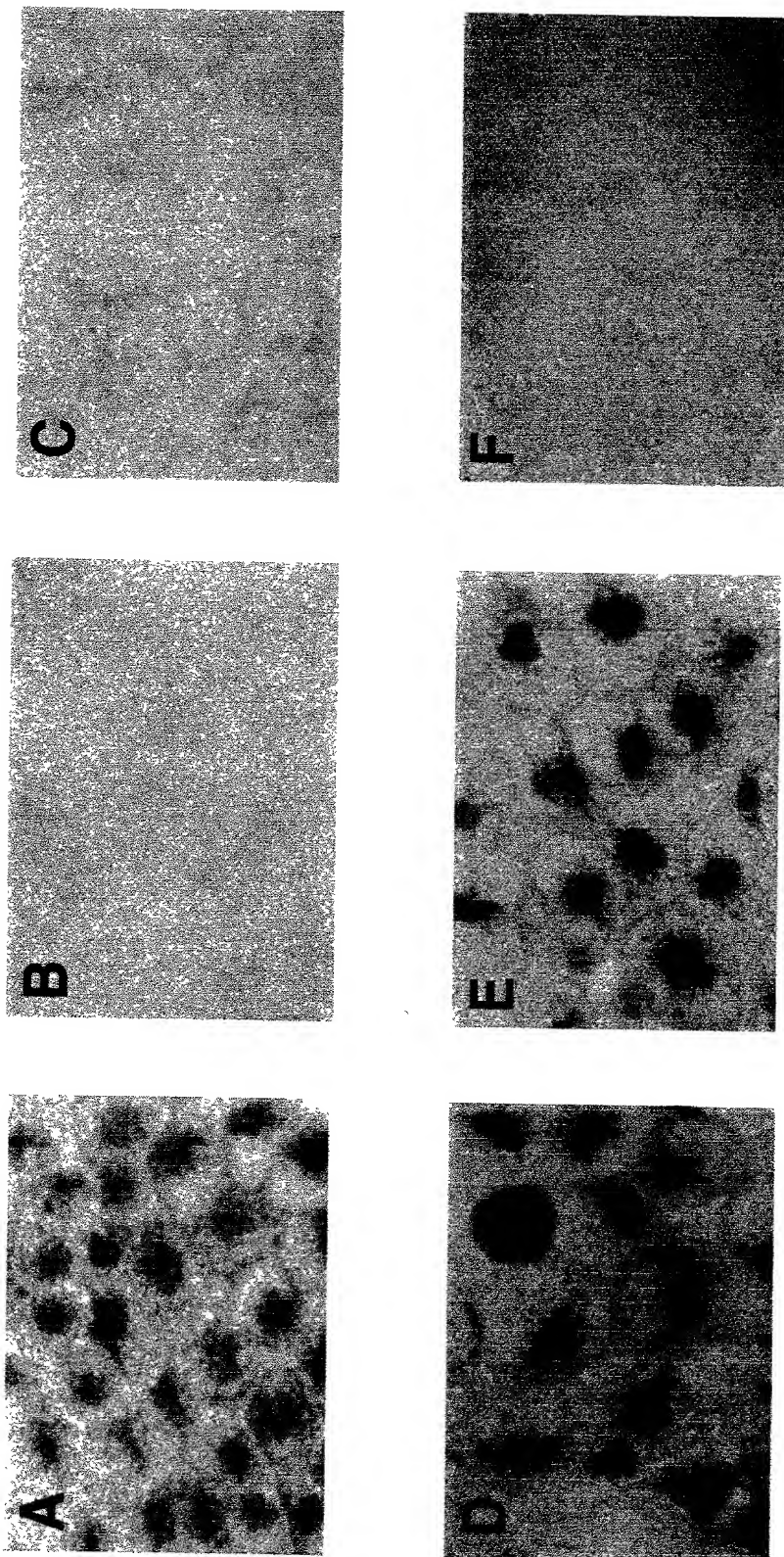


FIG. 4

TITLE: VIRUSES COMPRISING MUTANT ION CHANNEL PROTEIN  
INVENTORS NAME: Yoshihiro Kawaoka  
SERIAL NO.: 09/834,095

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FIG. 5

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PolI-5'WPB2 (SEQ ID NO:19)

CAC ACA CGT CTC GTA TTA GTA GAA ACA AGG TCG TTT TTA AAC TAT TCG  
ACA CTA ATT GAT GGC CAT CCG AAT TCT TTT GG

Length: 80 nt      Overlap: 26 nt

PolI-3'WPB2 (SEQ ID NO:20)

CAC ACA CGT CTC CGG GAG CGA AAG CAG GTC AAT TAT ATT CAA TAT GGA  
AAG AAT AAA AGA ACT AAG G

Length: 67 nt      Overlap: 24 nt

PolI-5'WPB1 (SEQ ID NO:21)

CAC ACA CGT CTC GTA TTA GTA GAA ACA AGG CAT TTT TTC ATG AAG GAC  
AAG CTA AAT TCA CTA TTT TTG CCG TCT GAG CTC TTC AAT GG

Length: 89      Overlap: 26 nt

PolI-3'WPB1 (SEQ ID NO:22)

CAC ACA CGT CTC CGG GAG CGA AAG CAG GCA AAC CAT TTG AAT GGA TGT  
CAA TCC GAC TTT ACT TTT C

Length: 67 nt      Overlap: 27 nt

PolI-5'WPA (SEQ ID NO:23)

CCA ACC CGT CTC CTA TTA GTA GAA ACA AGG TAC TTT TTT GGA CAG TAT  
GGA TAG CAA ATA GTA GCA TTG CCA CAA CTA TCT CAA TGC ATG TGT GAG  
GAA GGA G

Length: 103      Overlap: 25 nt

PolI-3'WPA (SEQ ID NO:24)

CCA ACC CGT CTC CGG GAG CGA AAG CAG GTA CTG ATT CAA AAT GGA AGA  
TTT TGT GCG ACA ATG CTT C

Length: 67 nt      Overlap: 27 nt

PolI-5'WHA (SEQ ID NO:25)

CAC ACA CGT CTC CTA TTA GTA GAA ACA AGG GTG TTT TTC C

Length: 40 nt      Overlap: 22 nt

PolI-3'WHA (SEQ ID NO:26)

CAC ACA CGT CTC CGG GAG CAA AAG CAG GGG AAA AT    AAA AAC AAC C

Length: 46 nt      Overlap: 29 nt

FIG. 6A

TITLE: VIRUSES COMPRISING MUTANT ION CHANNEL PROTEIN  
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SERIAL NO.: 09/834,095

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PolI-5'WNP (SEQ ID NO:27)

CAC ACA *CGT CTC* CTA TTA GTA GAA ACA AGG GTA TTT TTC TTT AAT TG

Length: 47 nt    Overlap: 30 nt

PolI-3'WNP (SEQ ID NO:28)

CAC ACA *CGT CTC* CGG GAG CAA AAG CAG GGT AGA TAA TCA CTC

Length: 42 nt    Overlap: 26 nt

PolI-5'WNA (SEQ ID NO:29)

CAC ACA *CGT CTC* CTA TTA GTA GAA ACA AGG AGT TTT TTG AAC AAA C

Length: 46 nt    Overlap: 29 nt

PolI-3'WNA (SEQ ID NO:30)

CAC ACA *CGT CTC* CGG GAG CGA AAG CAG GAG TTT AAA TGA ATC CAA ACC

Length: 48 nt    Overlap: 32 nt

PolI-5'WM (SEQ ID NO:31)

CAC ACA *CGT CTC* CTA TTA GTA GAA ACA AGG TAG TTT TTT ACT CCA GC

Length: 47 nt    Overlap: 30 nt

PolI-3'WM (SEQ ID NO:32)

CAC ACA *CGT CTC* CGG GAG CAA AAG CAG GTA GAT ATT GAA AG

Length: 41 nt    Overlap: 26 nt

PolI-5'WNS (SEQ ID NO:33)

CAC ACA *CGT CTC* CTA TTA GTA GAA ACA AGG GTG TTT TTT ATT ATT AAA  
TAA GC

Length: 53 nt    Overlap: 36 nt

PolI-3'WNS (SEQ ID NO:34)

CAC ACA *CGT CTC* CGG GAG CAA AAG CAG GGT GAC AAA GAC ATA ATG G

Length: 46 nt    Overlap: 30 nt

Italics:    BsmBI recognition sequence

Underlined: Influenza virus sequence

Underlined + Bold: Influenza virus coding region

FIG. 6B

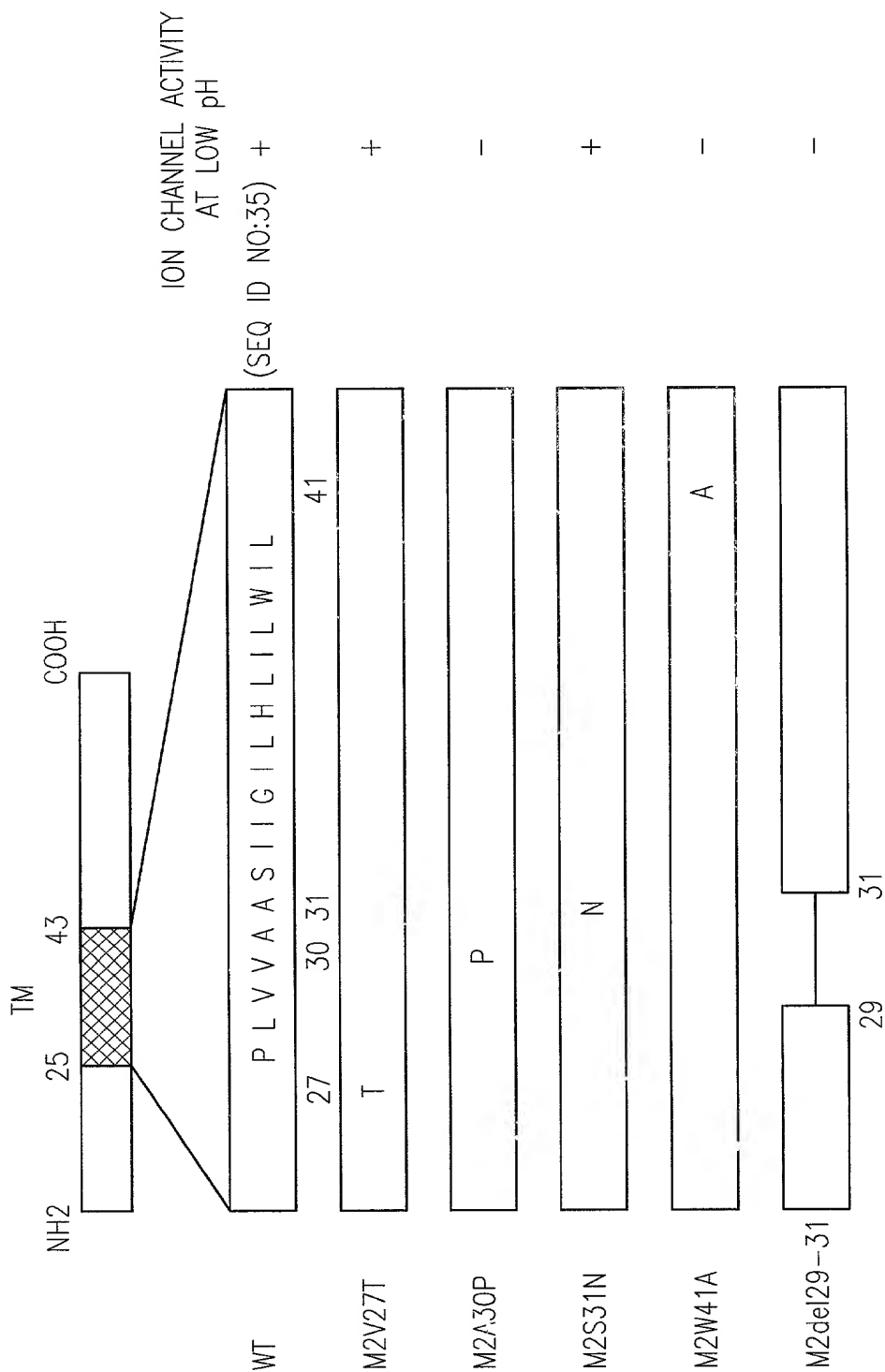


FIG. 7

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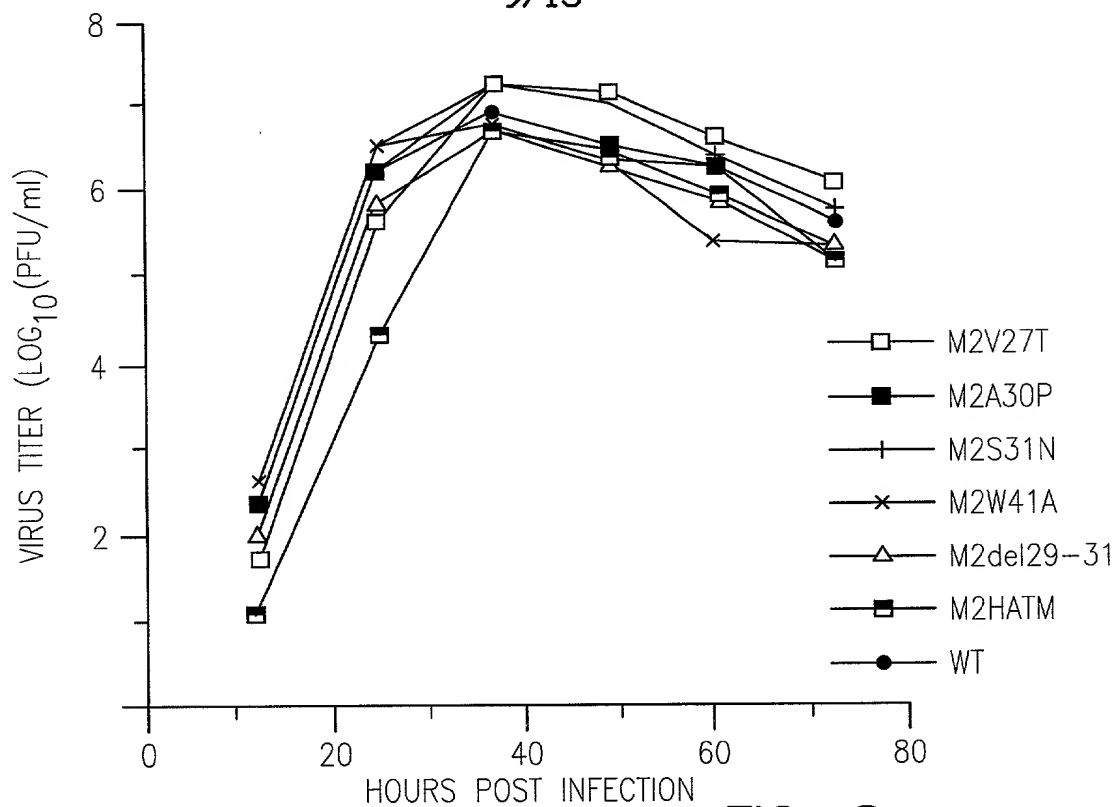


FIG. 8

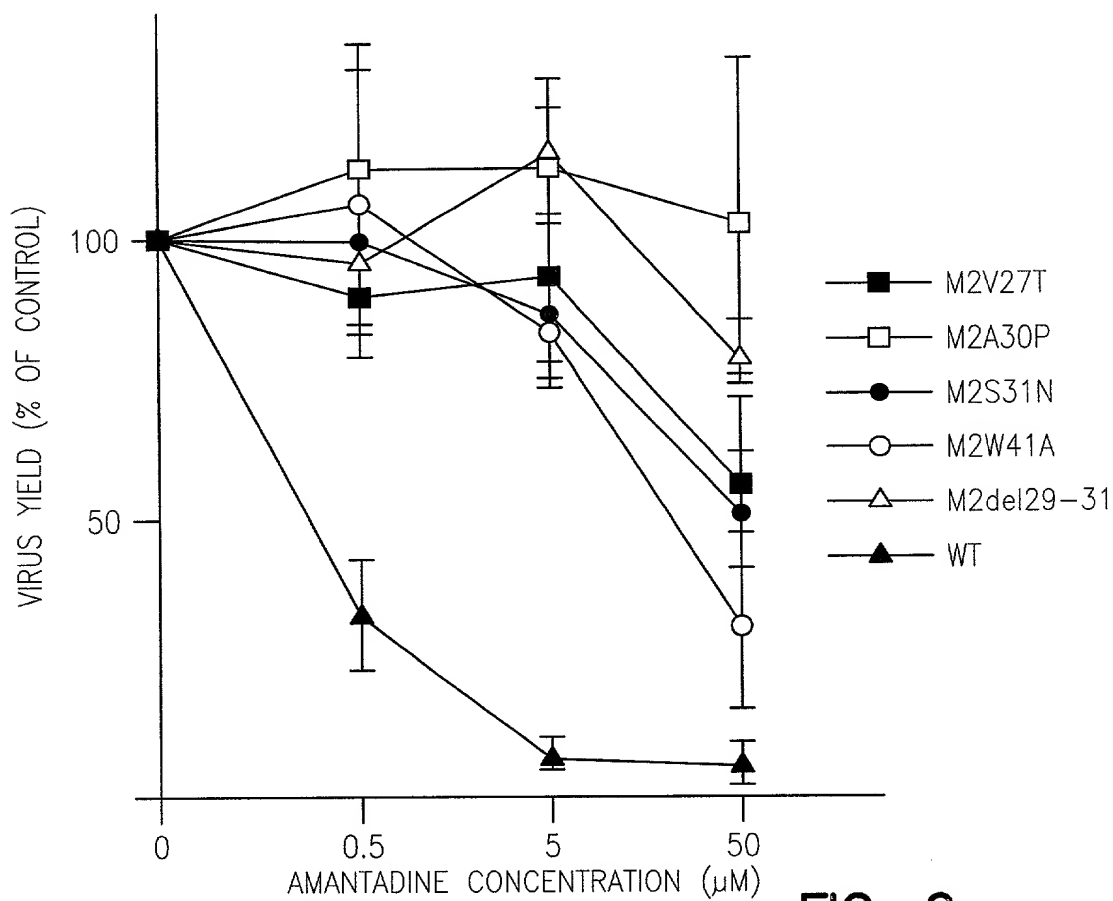


FIG. 9

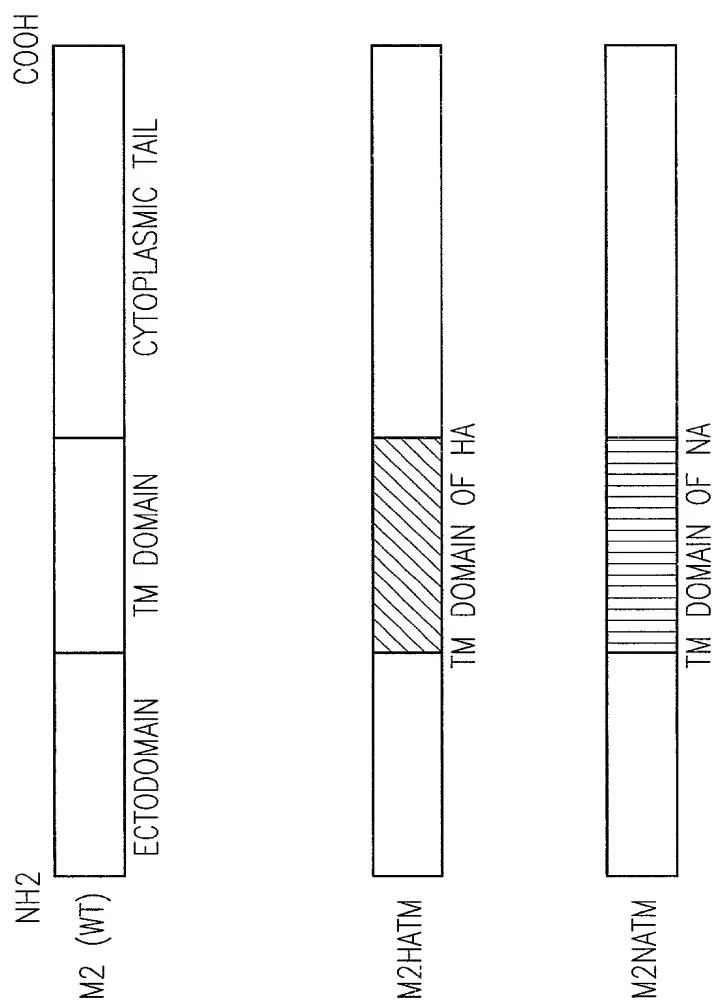


FIG. 10

TITLE: VIRUSES COMPRISING MUTANT ION CHANNEL PROTEIN  
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SERIAL NO.: 09/834,095

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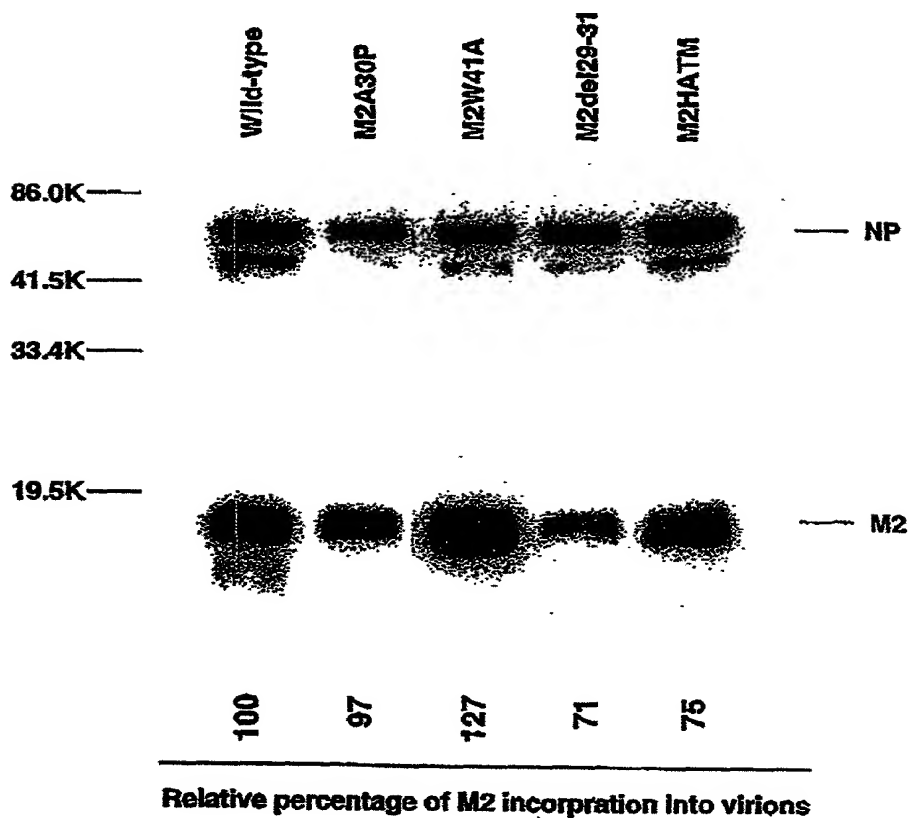


FIG. 11

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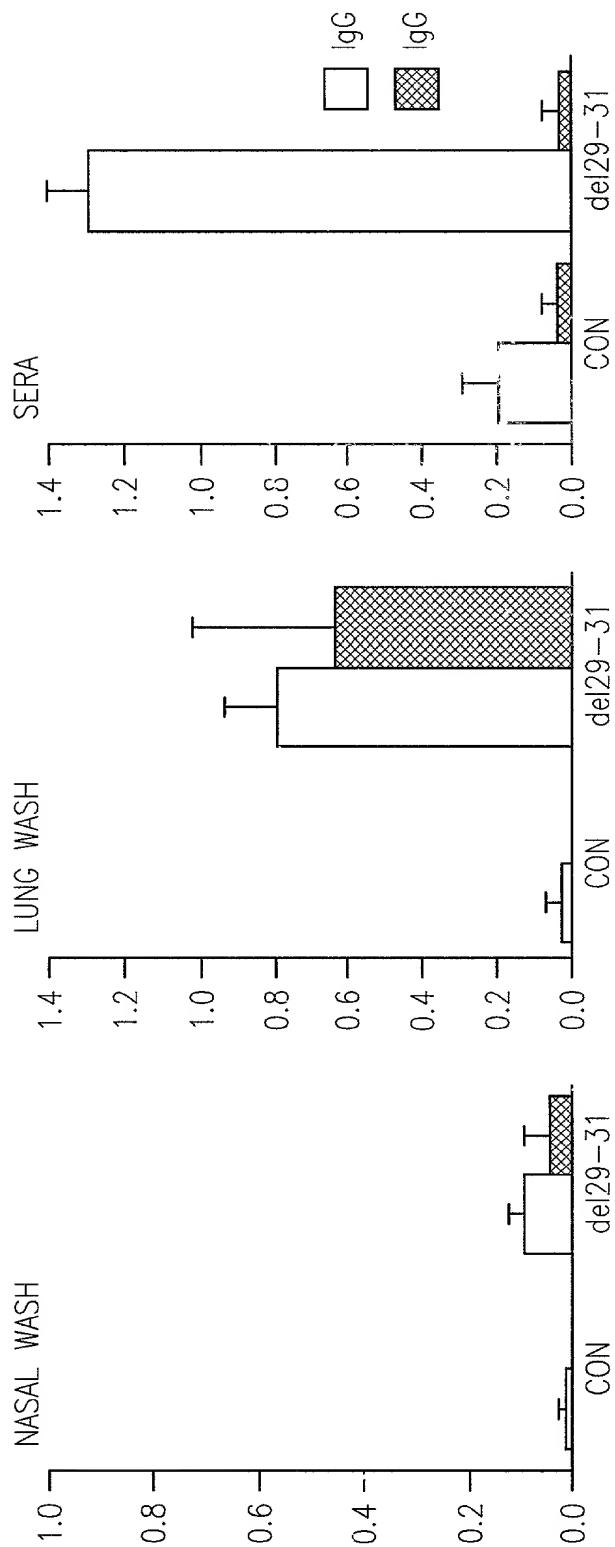


FIG. 12A

FIG. 12B

FIG. 12C

